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# CURRENT LITERATURE

## BOOK REVIEWS

### New text books of paleobotany

The first volume of SCOTT's *Studies*<sup>1</sup> appeared in the third edition during the autumn of 1920. The present volume treats of the Pteridophytes, and includes a new chapter on the recently discovered early Devonian Psilophytales from the Rhynie chert bed in Scotland. Other additions are an account of the Lycopodineous fructification *Mazocarpon* and further information about the leaves of Calamites, the roots of *Sphenophyllum*, and the root zone in *Psaronius*. The chapter on the Botryopterideae is completely rewritten, in accordance with the recent discoveries by PAUL BERTRAND, KIDSTON, and GORDON. It is to be hoped that the next volume containing the Gymnosperms will soon appear. SCOTT's *Studies* is unquestionably the most thorough treatment of fossil plants for the student of morphology, and the great value of the book is increased by the large number of excellent illustrations to which the author has devoted his careful attention in the successive editions.

No other text book of paleobotany has reached three editions, and only one was published a second time. This is POTONIÉ's *Lehrbuch*,<sup>2</sup> which is now being re-edited by POTONIÉ's successor, W. GOTHAN in Berlin. It has been carried as far as the Coniferales, and when completed will probably include the only modern treatment of Angiosperms in the literature of fossil botany. It is really an entirely new book, completely rewritten after POTONIÉ's death (1917). The illustrations are well chosen and numerous, and, in accordance with POTONIÉ's and GOTHAN's training as state geologists of Prussia, attention is paid to the geologic history of plants, although stratigraphic observations are merely scattered through the text and not combined into independent chapters. A fairly complete treatment of the stratigraphic aspects of paleobotany would be highly desirable if offered in the yet unpublished portions of the book.

For the present we possess a short survey of stratigraphic paleobotany in up-to-date form only in BERRY's last publication,<sup>3</sup> whose second part deals

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<sup>1</sup> SCOTT, D. H., Studies in fossil botany. 3d ed. Vol. I. 8vo. pp. vi+434. figs. 190. London. 1920.

<sup>2</sup> POTONIÉ's Lehrbuch der Paläobotanik. 2. Umgearbeitete Auflage von W. Gothan. Erste und zweite Lieferung. Berlin. 1919-1920.

<sup>3</sup> BERRY, E. W., Paleobotany: A sketch of the origin and evolution of floras. From the Smithsonian Report for 1918. pp. 289-407. pls. 6. Washington. 1920.

with this topic, while in the first part the status of biological paleobotany is outlined. How welcome a new presentation of the geologic history of plants must be to any paleontologist we can conclude from the fact that the only available books on the subject are W. P. SCHIMPER's *Traité de paléontologie végétale* (1869-1874) and Sir J. WILLIAM DAWSON's *Geological history of plants* (1888). Both books are out of date now. BERRY is probably the only living paleobotanist who could give us an exhaustive treatment of our present knowledge of fossil plants, including the Angiosperms, and of their geological distribution. It is to be hoped that his *Sketch* may soon be followed by a fuller treatment of the same subject.

No survey of the latest general treatises on paleobotany would be approximately complete without paying due respect to the concluding volumes of SEWARD's great reference book,<sup>4</sup> which represents the most exhaustive treatment of our present information on fossil Cryptogams and Gymnosperms. The last two volumes deal with the Pteridosperms, Cycadofilicales, Cordaitales, Cycadophyta, Ginkgoales, Coniferales, and Gnetales, to use SEWARD's own terminology. His book will remain for a long time the standard work on fossil botany and the main reference book for the students of this subject. The author promises in his preface to the fourth volume to publish in an independent volume a general review of the floras of the past, and the energy which allowed him to complete his monumental work after it had been started twenty-one years ago gives hope that he may fulfil his promise in the near future. The fact that neither SCOTT nor SEWARD dared to attack the intricate problems of the fossil Angiosperms shows clearly how much this great plant division is still in need of investigation. The morphological treatment of fossil Pteridophytes and Gymnosperms has lately absorbed the main attention of paleobotanists, to the great detriment of the higher orders. It is very much to be desired that this deficiency should soon be corrected.—A. C. NOÉ.

### Botany of Iceland

The first part of the second volume of this publication, under the editorship of ROSENVINGE and WARMING, includes contributions by ØSTRUP<sup>5</sup>, and GALLØE.<sup>6</sup> ØSTRUP has investigated the fresh-water diatom material of Copenhagen University, which had been assembled by 16 collectors. The list includes 468 species in 40 genera, 55 of the species being described as new. An instructive tabular survey of distribution is given under the two general heads of "universal distribution" and "distribution in the different parts of Iceland." The table shows that 95 per cent of the Icelandic forms occur in the rest of Europe, and about 50 per cent in Asia and America. In the arctic

<sup>4</sup> SEWARD, A. C., Fossil plants. Vols. III and IV. Cambridge. 1917 and 1919.

<sup>5</sup> ØSTRUP, ERNST, Fresh-water diatoms from Iceland. pp. 1-98. *pls.* 5. 1920.

<sup>6</sup> GALLØE, OLAF, The lichen flora and lichen vegetation of Iceland. pp. 101-247. 1920.